

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A process for producing foam beads from thermoplastic polymers, encompassing the stages of
 - a) addition of a blowing agent to a thermoplastic polymer melt,
 - b) cooling and extrusion, through a die, of the polymer melt comprising blowing agent,
 - c) cutting of the polymer melt comprising blowing agent downstream of the die at reduced pressure with foaming to give foam beads,which comprises using a blowing agent in which water and a solubilizer ~~or adsorbent~~ are present.
2. (Original) A process as claimed in claim 1, wherein the solubilizer used comprises an aliphatic alcohol, ketone, ether, or ester.
3. (Currently Amended) A process as claimed in claim 1, ~~wherein the further~~ comprising an adsorbent wherein the adsorbent used comprises aluminum hydroxide, phyllosilicate, or zeolite.
4. (Previously Presented) A process as claimed in claim 1, wherein the blowing agent also comprises CO₂, N₂, or an aliphatic, halogenated, or halogen-free hydrocarbon.
5. (Currently Amended) A process as claimed in claim 4, wherein the blowing agent used comprises a mixture of
 - from 0.1 to 3% by weight of water,
 - from 0.1 to 3% by weight of an alcohol or ketone, and
 - from 1 to 10% by weight of an aliphatic, halogenated, or halogen-free hydrocarbon, N₂, or CO₂ based on the thermoplastic polymer.
6. (Previously Presented) A process as claimed in claim 1, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.

7. (Previously Presented) A process as claimed in claim 1, wherein the thermoplastic polymer has a bi- or multimodal molecular weight distribution.
8. (Previously Presented) A process as claimed in claim 1, wherein the thermoplastic polymer used comprises polystyrene with a polydispersity M_w/M_n of at least 2.5.
9. (Previously Presented) A process as claimed in claim 1, wherein, prior to or after addition of the blowing agent, an IR absorber is added to the thermoplastic polymer melt.
10. (Original) A process as claimed in claim 9, wherein the IR absorber used comprises from 0.1 to 2.5% by weight based on the thermoplastic polymer melt, of graphite, carbon black, or aluminum powder.
11. (Currently Amended) A process as claimed in claim 2, ~~wherein the~~ further comprising an adsorbent wherein the absorbent used comprises aluminum hydroxide, phyllosilicate, or zeolite.
12. (Previously Presented) A process as claimed in claim 2, wherein the blowing agent also comprises CO₂, N₂, or an aliphatic, halogenated, or halogen-free hydrocarbon.
13. (Previously Presented) A process as claimed in claim 3, wherein the blowing agent also comprises CO₂, N₂, or an aliphatic, halogenated, or halogen-free hydrocarbon.
14. (Previously Presented) A process as claimed in claim 2, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.
15. (Previously Presented) A process as claimed in claim 3, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.

16. (Previously Presented) A process as claimed in claim 4, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.
17. (Previously Presented) A process as claimed in claim 5, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.
18. (Previously Presented) A process as claimed in claim 2, wherein the thermoplastic polymer has a bi-or multimodal molecular weight distribution.
19. (Previously Presented) A process as claimed in claim 3, wherein the thermoplastic polymer has a bi-or multimodal molecular weight distribution.
20. (Previously Presented) A process as claimed in claim 4, wherein the thermoplastic polymer has a bi-or multimodal molecular weight distribution.